Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Joe Bell, Environmental Cleanup Section II, Remediation Division **Date:** December 10, 2008

From: Vickie Reat, Technical Support Section, Remediation Division

Subject: Amendment to the Selection of Contaminants of Potential Concern (COPCs) for Ecological Risk, Technical Memorandum
Patrick Bayou Superfund Site - Deer Park, Texas
Prepared for the Patrick Bayou Joint Defense Group (JDG) by Anchor Environmental, L.L.C.
October 2008

I have completed my review of the subject document. The purpose of this amendment document is to address comments received from the U.S. EPA, the TCEQ, and the trustees regarding the document titled, "Draft Selection of COPCs for Ecological Risk Assessment" (April 2008). The COPC screening process that was used in the draft document was revised as a result of agency comments, incorporation of additional data received from U.S. EPA and TCEQ, and subsequent discussions and agreements between the JDG, U.S. EPA, TCEQ, and trustees. This amendment presents the revised screening process and the "final" selection of ecological COPCs for Patrick Bayou.

In an effort to minimize the need for comment exchange and resolution, after my initial review of this document I provided a list of comments and questions to Jason Kase of Anchor Environmental in an e-mail dated November 26, 2008. Mr. Kase provided responses to these comments in two e-mails dated December 4 and 8, 2008. For the record, I have attached copies of these two e-mails. Most of my comments/questions were resolved with this exchange of e-mails, coupled with a conference call on December 8, 2008 with Anchor representatives. Where my comments/questions were not completely resolved, they are detailed below. The Anchor Environmental representatives agreed to respond to these outstanding items in a future Technical Memorandum.

1. 4.3 Exposure Assessment – For this amendment, both dietary and incidental sediment ingestion were included in estimates of exposure for wildlife receptors (for bioaccumulative chemicals). According to the discussion, exposure was characterized using a daily intake model to calculate daily intake of COPCs using equation 4-1 (page 14) as adapted from the U.S. EPA's *Wildlife Exposure Factors Handbook*. The JDG should provide more discussion as to how this equation was adapted from the equations and related discussions in the *Wildlife Exposure Factors Handbook*. See related e-mail comment/question number 5.

2. 4.3.1.2 Gross Energies and Assimilation Efficiencies – Looking at the basis for the assimilation efficiencies (Table 4-3) for the various receptors, generally a 5th

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percentile value was used based on mean and standard deviation values from the U.S. EPA's *Wildlife Exposure Factors Handbook*. The assimilation efficiency for carnivorous birds (average and standard deviation) was assumed to be that for waterfowl consuming aquatic invertebrates (77% average, 8.4% standard deviation) using the Karasov (1990) reference indicated in the *Wildlife Exposure Factors Handbook* (page 4-15). The JDG should provide more discussion as to why the use of these values is an appropriately conservative surrogate for the assimilation efficiency associated with birds of prey consuming fish. See related e-mail comment/question number 3.

3. 4.3.1.4 Proportion of Prey Items in Diet – Prey items (Table 4-4) were organized into various prey classes of different size, trophic level, and home range. The various receptors were assumed to have a diet composed of these varied prey classes (Table 4-2). As presented in Table 4-2 and on page 16, the rationale for the assumed diet/prey size class was based on that used in the Calcasieu Baseline Ecological Risk Assessment (BERA). The JDG should provide more discussion and supporting references for the prey size class assumptions for each receptor. See related e-mail comment/question number 7.

4. 4.3.2 Sediment and Tissue Exposure Concentrations – BSAF values were derived from the Calcasieu Estuary BERA and the U.S. Corps of Engineers BSAF database. The majority of the sediment and tissue information came from the Calcasieu BERA. This information was provided in Table 37B (on CD) of the revised document. The JDG should ensure that the BSAF values extracted from the U.S. Corps of Engineers BSAF database (and used in combination with the Calcasieu data) are provided in the future ecological risk assessment submittals. See related e-mail comment/question number 8.

5. 4.6.3 – Mammals – For the mink Total Daily Intake (TDI) calculations, body weight was mistakenly entered as the free metabolic rate (FMR). This was a conservative error. Anchor Environmental representatives provided a spread sheet showing revised TDIs and hazard quotients for the mink. Since this was a conservative error, a number of previously "uncertain COPCs" were dropped from the COPC list, and several COPCs are now "uncertain COPCs." The JDG should provide the revised mink calculations for the record and should also make any changes to the final overall COPC list as appropriate. See related e-mail comment/question number 12.

Attachments: E-mails from Jason Kase of Anchor Environmental to Vickie Reat dated December 4 and December 8, 2008.